CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

Job No.: CTCE/BBMP/W.No.14/KRIDL/CEMENT/2012-13

Date: 22.02.2013

TEST REPORT

CLIENT	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager (West),** KRIDL,Bangalore.
NAME OF THE WORK	:	Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.
REFERENCE	:	BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013
SAMPLE ID	:	CEMENT
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-1989
1	a) Initial Setting Time	IS-4031 (Part -5)	199 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	478 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00 %	-

Information is furnished by the Agency

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ಟಿ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಯಶವಂತಪುರ, ಬೆಂಗಳೂರು - 560 073

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar,
Bangalore - 560 079

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagara, Bangalore-79.
Tele fax : 23223227, Cell : 93428 39190, Website : www.civiltechconsultants.com
e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.14/KRIDL/SAND/2012-13 : 22.02.2013

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL,Bangalore.

Name of Work : Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013

Date of Testing : 22.02.2013

Material : Sand Total Wt. of Aggregates in gms **2000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	103	5.15	5.15	94.9	90-100
2.36	218	10.90	16.05	84.0	75-100
1.18	512	25.60	41.65	58.4	55-90
600 Micron	416	20.80	62.45	37.6	35-59
300 Micron	486	24.30	86.75	13.3	8-30
150 Micron	213	10.65	97.40	2.6	0-10

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M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar,
Bangalore-560079

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagara, Bangalore-79.
Tele fax : 23223227, Cell : 93428 39190, Website : www.civiltechconsultants.com
e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.14/KRIDL/AGG/2012-13 : 22.02.2013

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL,Bangalore.

Name of Work : Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013

Date of Testing : 22.02.2013

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **20000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	597	2.99	2.99	97.02	95-100
20	11768	58.84	61.83	38.18	30-70
10	5264	26.32	88.15	11.86	10-35
4.75	1986	9.93	98.08	1.92	0-5

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M/s. Civil-Tech Consultants & Engineers

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagara, Bangalore-79.
Tele fax : 23223227, Cell : 93428 39190, Website : www.civiltechconsultants.com
e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.14/KRIDL/STEEL/2012-13 25.02.2013

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West),** KRIDL,Bangalore.
Name of the work	:	Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.
Reference	:	BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013
Date of Test	:	25.02.2013
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	10	0.62	513	552	13.40	O.K	O.K

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23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathi Nagara
Bangalore.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagara, Bangalore-79.
Tele fax : 23223227, Cell : 93428 39190, Website : www.civiltechconsultants.com
e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.14/KRIDL/CUBE/2012-13

27.03.2013

TEST REPORT ON CONCRETE CUBES

Client	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager (West),** KRIDL,Bangalore.
Name of the work	: Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.
Reference	: BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 22.02.2013
Sample ID	: Road Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 28^{th} day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	27.02.2013	27.03.2013	8.264	522.9	23.24
2	27.02.2013	27.03.2013	8.369	535.4	23.80
3	27.02.2013	27.03.2013	8.462	540.6	24.03

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M/s. Civil-tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathi Nagara
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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬಾಗಲಗುಂಟೆ, ಬೆಂಗಳೂರು - 560 073

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagara, Bangalore-79.
Tele fax : 23223227, Cell : 93428 39190, Website : www.civiltechconsultants.com
e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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JobNo: CTCE/BBMP/W.No.14/KRIDL/WMM/Gradation/2012-13

27.02.2013

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL,Bangalore.

Name of Work : Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013

Date of Testing : 27.02.2013

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **10842**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	475	475	4.4	95.6	95-100
22.4	2364	2839	26.2	73.8	60-80
11.2	2231	5070	46.8	53.2	40-60
4.75	1932	7002	64.6	35.4	25-40
2.36	1264	8266	76.2	23.8	15-30
0.600	1440	9706	89.5	10.5	8-22
0.075	826	10532	97.1	2.9	0-8

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4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar,
Bangalore - 560 079

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e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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JobNo: CTCE/BBMP/W.No.14/KRIDL/WMM/AIV/2012-13 27.02.2013

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL,Bangalore.
Name of the Work	Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	27.02.2013

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	387	382	379	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	91	88.5	86.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296	293.5	292.5	
4	Aggregate Impact value = percent fines	23.51	23.17	22.82	
	100* (W_2/W_1)%				23.17

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar,
Bangalore - 79

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagara, Bangalore-79.
Tele fax : 23223227, Cell : 93428 39190, Website : www.civiltechconsultants.com
e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Engineering Project Consultants

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JobNo: CTCE/BBMP/W.No.14/KRIDL/Shape.T/2012-13 · 27.02.2013

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL,Bangalore.

Name of Work : Improvements to Cross Roads to Munikondappa Layout and Muneshwarânagara in Bagalagunte in Ward No.14, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2012-13 Dated: 20.02.2013

Technical Reference : IS 2386(Part 1) 1963 (RA 2007)

Type of Mix : Wet Mix Macadam

Date of Testing : 27.02.2013

Passing through IS Sieve, mm	Retained On IS Sieve, mm	Weight of Sieved Fraction (W) gms		Proportion of Size range in the sample, X = 100xW/ΣW		Weight of 200 pieces of aggregates of the range, (P) in gms		Thickness gauge size, mm	Weight of flaky particles (F)in gms		Percentage by Weight of flaky aggregates in gms Y= 100xF/P	Weighed Percentage of flaky aggregates in gms XY=X × Y	Weight of fraction consisting of at least 200 Pieces in gms		Length gauge size in mm	Weight of aggregates in each fraction retained on Length gauge in gms	
63.00	50.00	W1		X1		P1		33.90	F1				P1		-	E1	
50.00	40.00	W2	2830	X2	20.27	P2	2785	27.00	F2	470	16.88	342.14	P2	2785.0	81.00	E2	252
40.00	31.50	W3	2590	X3	18.55	P3	2416	21.50	F3	342	14.16	262.65	P3	2416.0	64.40	E3	220
31.50	25.00	W4	2435	X4	17.44	P4	2352	16.95	F4	286	12.16	212.12	P4	-	-	E4	-
25.00	20.00	W5	1980	X5	14.18	P5	1850	13.50	F5	242	13.08	185.55	P5	1850.0	40.50	E5	206
20.00	16.00	W6	1530	X6	10.96	P6	1460	10.80	F6	220	15.07	165.16	P6	1460.0	32.40	E6	178
16.00	12.50	W7	1324	X7	9.48	P7	1316	8.55	F7	95	7.22	68.47	P7	1316.0	25.60	E7	165
12.50	10.00	W8	780	X8	5.59	P8	680	6.75	F8	88	12.94	72.31	P8	680.0	20.20	E8	102
10.00	6.30	W9	490	X9	3.51	P9	320	4.89	F9	76	23.75	83.37	P9	320.0	14.70	E9	98
		Σ W	**13959.0**									**ΣXY 1391.77**	**ΣP**	**10827.0**		**ΣE**	**1221.0**

Result : Flakiness Index = **13.92%**

Elongation Index = **11.28%**

Result : Combined Flakiness & Elongation index **25.20%**

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23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar,
Bangalore-79

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27.02.2013

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to Cross Roads to Munikondappa Layout and Muneshwaranagara in Bagalagunte in Ward No.14, BBMP, Bangalore.

Reference : BBMP/DZ./AEE/TDSD/PR/2012-13 Dated: 20.02.2013

Date of Testing : 27.02.2013

Material : WMM

Sample Location : WMM Mix Plant

As per MORTH Table 400-13

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.45	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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e-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com